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ABSTRACT

In an effort to obtain systematic information concerning environmentally-oriented instruction and research programs at state universities, the Council on Research Policy and Administration of the National Association of State Universities and Land Grant Colleges developed a questionnaire for this purpose. The objectives were to obtain information on (1) university organization for administration of environmental science academic programs, (2) instructional activities in environmental science areas, and (3) the nature and magnitude of interdisciplinary research programs currently operative. Responses from 85 out of 100 universities surveyed indicate that 62 have some sort of academic units established. Six listed a School of Environmental Science and seven listed a Department of Environmental Science. It was concluded most institutions apparently have developed interdisciplinary programs within their normal disciplinary school and department structure. The most frequently listed interdisciplinary research unit was Water Resources with 50 listings. Next most frequent was urban/regional planning (39), followed by air resources (29), marine resources (27), and environmental health (26). The largest units, based on the number of faculty and graduate students and dollar support, were Water Resources, Marine Resources, Urban and Regional Planning, and Environmental Health. Four tables tabulate the individual data. A sample questionnaire is not included. (BL)

ENVIRONMENTAL EDUCATION AND RESEARCH PROGRAMS AT STATE UNIVERSITIES

Roy A. Young

In discussions in 1970 it became evident to members of the Council on Research Policy and Administration of the National Association of State Universities and Land Grant Colleges that little systematic information was available concerning environmentally oriented instruction and research programs at state universities.

Conversations with representatives of several federal agencies and the Planning Committee for the 1972 United Nations Conference on the Human Environment in Stockholm showed almost complete lack of awareness of the rather extensive research efforts in environmental science areas at a number of universities.

In an effort to obtain information on interdisciplinary environmental education and research programs at state universities, a committee¹ was appointed to develop a questionnaire to be circulated by mail and to organize the results of the survey for presentation to CRPA membership.

The objectives of the questionnaire were to obtain information on (1) university organization for administration of environmental science academic programs, (2) instructional activities in environmental science areas, and (3) the nature and magnitude of interdisciplinary research programs currently operative on campuses of state universities.

The questionnaire was addressed to Vice Presidents for Research, Deans for Research or other administrative officers responsible for research coordination and administration at state universities.

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Ralph W. Cummings, Administrative Dean for Research, North Carolina State University at Raleigh
John E. Nellor, Associate Vice President for Research Development, Michigan State University
Roy A. Young, Vice President for Research and Graduate Studies, Oregon State University

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Two surveys were made. The first survey was conducted in the Spring of 1971 and results were tabulated in early summer. Originally it was planned that these results would be summarized and distributed at the 1971 meeting of the Council on Research Policy and Administration. However, a review of results indicated a number of discrepancies in information supplied by several universities. We, therefore, decided not to distribute the results of the first questionnaire, but to attempt to improve the questionnaire and circulate the revised form to all state universities in the Spring of 1972.

In 1972 questionnaires were mailed to 100 universities and responses were obtained from 85. This report summarizes information obtained in the two surveys.

A number of universities indicated that the format of the questionnaire did not provide an opportunity for them to present a complete picture of the effort in environmental sciences on their individual campuses. Also, several institutions responded that, rather than setting up separate units for environmental science, both instructional and research efforts had been integrated into instructional and research efforts in disciplinary departments.

The information obtained from the questionnaires is tabulated in the following four tables. Because there are some inconsistencies in reports from institutions, respondents may wish to correct this draft before it is reproduced and distributed by NASULGC. Table 1 indicates whether or not institutions responded to the questionnaires in 1971 and 1972 and indicates whether or not academic units were established on the respondent's campuses.

Sixty-two of the 85 universities responding indicated that they have some sort of academic units established. Only six, however, listed a School of Environmental Science and only seven listed a Department of Environmental Science.

Most institutions apparently have developed interdisciplinary programs within their normal disciplinary school and departmental structure.

Eight institutions that had no established academic units in 1971 reported a unit in 1972. Of the eight, only one was a School of Environmental Science. The others were institutes or programs.

Table 2 indicates the presence or absence of listed interdisciplinary research units on campuses of the responding institutions in 1971-72.

Table 3 presents a summary of the numbers of institutions with various interdisciplinary research units, information on numbers of faculty and graduate students, and dollar support for each different research unit in 1971.

Table 4 presents similar information for 1972.

The most frequently listed interdisciplinary research unit was Water Resources with 50 listings. Next most frequent was urban/regional planning (39), followed by air resources (29), marine resources (27) and environmental health (26).

The largest units based on faculty FTE and numbers of graduate students were Water Resources, Marine Resources, Urban and Regional Planning, and Environmental Health.

Many institutions are still in the process of attempting to determine the most suitable organizational structure to meet their needs for increased emphasis on instruction and research in different areas of the environmental sciences. It is hoped that the information from this survey will be useful to institutions still in the process of reviewing models for environmental science programs, as well as to other institutions, federal agencies, and foundations.

mep
11/7/72

Units Established in 1971 and 1972

[illegible]

State Colleges and Universities to Questionnaire Regarding Environmental Science Academic
Established in 1971 and 1972

University	Responded to Questionnaire														Name of Respondent	
	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	First Name - 1971	Second Name - 1972
University of California	X		X	X											Ben T. Lanham, Jr.	
University of California															Roder Sayers	
University of California															K. M. Rae	
University of California															H. B. Hunnicut	
University of California															A. Richard Kassander	
University of California															R. E. McDermott	
University of California															Robert E. Babcock	
University of California															David L. Jacobson	
University of California															B. A. Shaine	
University of California															Roderick Nash	
University of California															Francis M. Gilbert	
University of California															Corrine Verhulst	

Name of College or University	Responded to Questionnaire											
	1971	No	1972	No	1971	Yes	1972	Yes				
U. of California-Irvine					X	X						
U. of California-Riverside					X	X						
U. of California-San Diego					X	X						
Colorado State University					X	X						
University of Colorado	X				X							
Connecticut Ag. Exp. Sta.					X	X						
University of Connecticut					X	X						
Delaware State College	X	X										
University of Delaware					X	X						
Florida State University			X		X							
University of Florida					X	X						
Georgia Institute of Technology					X	X						
University of Georgia					X	X						
	1971	No Academic Unit	1972	Established								
	1971	School or College of	1972	Environmental Science								
	1971	School or Department	1972	of Human Ecology								
	1971	Department of	1972	Environmental Science								
	1971	Environmental Science	1972	Institute								
	1971	Environmental Science	1972	Center								
	1971	Environmental Studies	1972	Center								
	1971	Environmental Health	1972	Sciences Center								
	1972	Environmental Studies		Program								
	1972	Institute of Ecology										
	1972	Environmental Quality		Center								
	1972	Institute for		Natural Resources								
	1971	Any Other	1972	Academic Unit								
	1971	Total Units Established	1972	by College or University								

	1971	No	1971	Yes
	1972	No	1972	Yes
University	X		X	X
side	X		X	X
Hiego	X		X	X
ity	X		X	X
sta.	X		X	X
cent	X		X	X
ty	X		X	
Technology	X		X	X

[illegible]

Name of College or University	Responded to Questionnaire																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	1971	No	1972	No	1971	Yes	1972	Yes	1971	No Academic Unit	1972	Established	1971	School or College of	1972	Environmental Science	1971	School or Department	1972	of Human Ecology	1971	Department of	1972	Environmental Science	1971	Environmental Science	1972	Institute	1971	Environmental Science	1972	Center	1971	Environmental Studies	1972	Center	1971	Environmental Health	1972	Sciences Center	1972	Environmental Studies	Program	1972	Institute of Ecology	1972	Environmental Quality	Center	1972	Institute for	Natural Resources	1971	Any Other	1972	Academic Unit	1971	Total Units Established	1972	by College or University																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
University of Hawaii			X	X					X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

1971	No
1972	No
1971	Yes
1972	Yes

[illegible]

		Name of Respondent	
		First Name - 1971	Second Name - 1972
No Academic Unit Established			
School or College of Environmental Science			
School or Department of Human Ecology			
Department of Environmental Science			
Environmental Science Institute			
Environmental Science Center			
Environmental Studies Center			
Environmental Health Sciences Center			
Environmental Studies Program			
Institute of Ecology			
Environmental Quality Center			
Institute for Natural Resources			
Any Other Academic Unit			
Total Units Established by College or University			

Responded to Questionnaire

Name of College or University	1971		1972	
	No	Yes	No	Yes
University of Maine		X		X
University of Maryland			X	X
University of Maryland, Eastern Shore	X			
Massachusetts Institute of Tech.	X		X	
University of Massachusetts		X	X	X
Wayne State University.	X		X	
Michigan State University		X	X	X
University of Michigan		X	X	X
University of Minnesota		X	X	X
Alcorn A&M University		X	X	X
Mississippi State University		X	X	X
University of Mississippi		X	X	X
University of Missouri		X	X	X

[illegible]

1971	No Academic Unit
1972	Established
1971	School or College of
1972	Environmental Science
1971	School or Department
1972	of Human Ecology
1971	Department of
1972	Environmental Science
1971	Environmental Science
1972	Institute
1971	Environmental Science
1972	Center
1971	Environmental Studies
1972	Center
1971	Environmental Health
1972	Sciences Center
1972	Environmental Studies
	Program
1972	Institute of Ecology
1972	Environmental Quality
	Center
1972	Institute for
	Natural Resources
1971	Any Other
1972	Academic Unit
1971	Total Units Established
1972	by College or University

First Name - 1971
Second Name - 1972



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Name of College or University	Responded to Questionnaire													
	1971	No	1972	No	1971	Yes	1972	Yes						
University of North Dakota			X	X										
Kent State University			X	X										
Miami University	X		X	X										
Ohio State University			X	X										
Ohio University			X	X										
University of Oklahoma			X	X										
Langston University		X												
Oklahoma State University			X	X										
Oregon State University			X	X										
University of Oregon			X	X										
Pennsylvania State University			X	X										
University of Puerto Rico	X			X										
University of Rhode Island	X	X												
	1971	No Academic Unit	1972	Established										
	1971	School or College of	1972	Environmental Science										
	1971	School or Department	1972	of Human Ecology										
	1971	Department of	1972	Environmental Science										
	1971	Environmental Science	1972	Institute										
	1971	Environmental Science	1972	Center										
	1971	Environmental Studies	1972	Center										
	1971	Environmental Health	1972	Sciences Center										
	1972	Environmental Studies		Program										
	1972	Institute of Ecology												
	1972	Environmental Quality		Center										
	1972	Institute for		Natural Resources										
	1971	Any Other	1972	Academic Unit										
	1971	Total Units Established	1972	by College or University										

Name of College or University

1971	No
1972	No
1971	Yes
1972	Yes

Clemson University
South Carolina State College
University of South Carolina
South Dakota State University
University of South Dakota
Tennessee State University
University of Tennessee
Texas A&M University
Prairie View A&M
Texas Technological University
University of Texas
Utah State University
University of Utah

[illegible][illegible]

[illegible][illegible]

Name of Respondent	First Name - 1971	Second Name - 1972
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
55	55	55
56	56	56
57	57	57
58	58	58
59	59	59
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61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

1971 By College or
1972 University

40



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University
Belts
City
University
Shire
University
Carolina
ota

Name of College or University											
University of Texas	1971	23	X	X	X	X	X	X	X	X	X
Utah State University	1972	29	X	X	X	X	X	X	X	X	X
University of Vermont	1971	42	X	X	X	X	X	X	X	X	X
University of Virginia	1972	50	X	X	X	X	X	X	X	X	X
Virginia Polytechnic Inst.	1971	11	X	X	X	X	X	X	X	X	X
Virginia State College	1972	16	X	X	X	X	X	X	X	X	X
Washington State University	1971	20	X	X	X	X	X	X	X	X	X
University of Washington	1972	27	X	X	X	X	X	X	X	X	X
West Virginia University	1971	10	X	X	X	X	X	X	X	X	X
University of Wisconsin	1972	15	X	X	X	X	X	X	X	X	X
TOTAL UNITS	1971	15	X	X	X	X	X	X	X	X	X
	1972	21	X	X	X	X	X	X	X	X	X
	1971	23	X	X	X	X	X	X	X	X	X
	1972	26	X	X	X	X	X	X	X	X	X
	1971	13	X	X	X	X	X	X	X	X	X
	1972	15	X	X	X	X	X	X	X	X	X
	1971	19	X	X	X	X	X	X	X	X	X
	1972	26	X	X	X	X	X	X	X	X	X
	1971	15	X	X	X	X	X	X	X	X	X
	1972	23	X	X	X	X	X	X	X	X	X
	1971	9	X	X	X	X	X	X	X	X	X
	1972	15	X	X	X	X	X	X	X	X	X
	1971	18	X	X	X	X	X	X	X	X	X
	1972	24	X	X	X	X	X	X	X	X	X
	1971	15	X	X	X	X	X	X	X	X	X
	1972	22	X	X	X	X	X	X	X	X	X
	1971	7	X	X	X	X	X	X	X	X	X
	1972	16	X	X	X	X	X	X	X	X	X
	1971	18	X	X	X	X	X	X	X	X	X
	1972	32	X	X	X	X	X	X	X	X	X
	1971	9	X	X	X	X	X	X	X	X	X
	1972	15	X	X	X	X	X	X	X	X	X
	1971	7	X	X	X	X	X	X	X	X	X
	1972	11	X	X	X	X	X	X	X	X	X
	1971	14	X	X	X	X	X	X	X	X	X
	1972	39	X	X	X	X	X	X	X	X	X
	1971	7	X	X	X	X	X	X	X	X	X
	1972	14	X	X	X	X	X	X	X	X	X
	1971	14	X	X	X	X	X	X	X	X	X
	1972	18	X	X	X	X	X	X	X	X	X
	1971	20	X	X	X	X	X	X	X	X	X
	1972	24	X	X	X	X	X	X	X	X	X
	1971	6	X	X	X	X	X	X	X	X	X
	1972	12	X	X	X	X	X	X	X	X	X
	1971	14	X	X	X	X	X	X	X	X	X
	1972	16	X	X	X	X	X	X	X	X	X

Table 3. Summary of Number and Magnitude of Interdisciplinary Environmental Research Units Reported by State Colleges and Universities in Response to First Questionnaire (1971)

Interdisciplinary Research Unit	Number of Institutions With Unit	Total No. in Each Size Category-Fac FTE (Incl. Postdoc. Res. Assoc.)						Total No. of Grad. Students	Total No. in Each Support Category (Thousands of Dollars)					
		<3	<6	<9	<12	>12			*100	100-250	250-500	500-1000	>1000	
Water Resources	42	11	7	8	4	10	575	7	15	6	3	3	3	
Air Resources	23	5	4	3	3	4	249	7	6	0	4	1	1	
Environmental Health	23	1	8	4	1	5	258	8	4	3	1	1	1	
Recreation	20	10	6	2	1	0	120	12	3	1	0	0	0	
Marine Resources	20	2	6	3	1	5	503	5	4	3	3	2	2	
Solid Waste Mgt.	19	8	4	3	0	2	73	5	4	1	0	0	0	
Nutrition	19	2	6	2	2	5	181	5	5	2	0	1	1	
Land Use	18	4	5	2	2	2	66	8	2	1	0	0	0	
Population Control	17	6	4	2	0	3	96	7	3	0	2	0	0	
Transportation	15	4	3	3	0	2	92	7	1	0	0	3	0	
Nuclear Science	15	1	3	3	2	1	41	2	1	5	1	1	1	
Pesticides	15	2	2	5	3	2	120	5	3	2	2	1	1	
Science & Pub. Policy	14	7	2	1	2	2	84	7	4	1	0	0	0	
Urban & Reg. Planning	14	2	5	3	2	3	148	4	2	4	0	0	0	
Regional Planning	14	4	5	0	3	1	115	6	2	0	0	0	1	
Urban Planning	12	1	4	2	3	1	177	3	4	0	0	0	2	
Family Planning	12	4	2	3	0	3	78	4	2	0	2	0	0	
Mineral Resources	11	4	2	1	1	2	48	4	2	1	1	1	0	
Coastal Zone-Mgt.	11	2	2	0	1	2	85	3	2	1	1	0	1	
Toxicology	9	2	3	0	0	2	60	3	1	1	1	1	0	
Community Design	9	1	3	3	0	0	54	6	1	0	0	0	0	
Noise-Acoustic Stress	7	2	4	0	0	0	15	4	0	0	0	0	0	
Human or Family Ecol.	7	1	2	0	1	2	125	2	0	1	1	0	0	
Environmental Law	6	3	2	1	0	0	7	2	0	0	0	0	0	
Housing	6	1	2	0	1	0	19	3	0	0	0	0	0	
All Others Combined	19*	3	7	2	1	4	331	5	6	3	1	1	1	
TOTALS	397	93	101	56	34	63	3,720	134	77	36	24	17	17	

*Nineteen universities responded for a total of 33 "other" units.

Table 4. Summary of Number and Magnitude of Interdisciplinary Environmental Research Units Reported by State Colleges and Universities in Response to Second Questionnaire (1972)

Interdisciplinary Research Unit	Number of Institutions	Total No. in Each Size Category-Fac. FTE (Incl. Postdoc. Res. Assoc.)					Total No. of Grad. Students	Total No. in Each Support Category (Thousands of Dollars)				
		<3	<6	<9	<12	>12		<100	100-250	250-500	500-1000	>1000
Name	With Unit											
Water Resources	50	9	15	8	1	12	638	10	22	7	3	3
Urban or Reg. Planning	39	6	13	8	4	6	601	16	4	7	0	2
Land Use	32	9	7	7	4	3	125	16	6	1	0	0
Air Resources	29	6	7	5	3	5	247	7	8	1	3	2
Marine Resources	27	2	5	6	4	9	612	4	2	5	3	4
Environmental Health	26	1	8	5	1	5	317	8	5	2	2	2
Nutrition	26	1	7	5	3	7	283	9	5	2	1	0
Solid Waste Mgt.	24	9	7	4	1	2	104	11	2	2	0	1
Recreation	24	10	8	3	1	2	168	14	4	1	0	0
Pesticides	23	5	6	3	6	3	139	6	2	6	2	1
Transportation	22	8	6	3	2	2	108	8	4	2	2	0
Nuclear Science	21	1	5	3	6	2	232	2	5	5	2	1
Science & Pub. Policy	18	7	5	2	2	0	56	5	7	0	1	1
Mineral Resources	16	4	2	3	1	5	142	4	4	2	2	0
Human Ecology	16	6	5	1	2	1	146	6	2	1	0	0
Family Planning	15	4	4	2	2	2	102	5	2	0	0	2
Coastal Zone Mgt.	15	4	4	3	1	0	59	5	1	4	2	0
Toxicology	15	3	7	1	1	3	67	3	3	1	2	0
Community Design	15	4	3	3	2	1	71	7	2	0	0	0
Noise-Acoustic Stress	14	6	6	0	1	0	23	6	1	0	0	0
Remote Sensing	13	2	4	2	1	3	83	3	3	1	2	1
Housing	11	3	2	1	2	0	35	5	2	0	0	0
Environmental Resources	6	0	2	2	0	2	2	0	1	2	0	1
Environmental Research	3	2	1	0	0	0	8	2	1	0	0	0
Environmental Education	1	1	0	0	0	0	0	1	0	0	0	0
All Others Combined	31*	6	11	3	3	4	294	8	9	5	2	1
TOTALS	532	119	150	83	54	79	4,662	171	107	57	29	22

*Thirty-one universities responded for a total of 38 "other" units.